VOL. XXXI No. 7. July, 1961

AGRICULTURAL BULLETIN

PUBLISHED BY THE

BERMUDA DEPARTMENT OF AGRICULTURE

Gordon R. Groves, Director of Agriculture

FLORISTS' FLOWERS

The cultivation of flowers for the cut flower trade is a long established horticultural art. The aim of the florists has been not only to raise new varieties, but to set standards of perfection at which to aim, and to exclude varieties which fail to conform to the standards set. In many instances and at various times, the standards set have been very rigid, such as only a few cultivators could reach, (and to retain the standards not only the qualities of the variety, but the skill of the cultivator had to combine), with the not infrequent result that the cultivation of a particular florists' flower has eventually been restricted to a very few enthusiasts, and the plant itself has quite undeservedly fallen out of public favour. On the other hand, florists have conferred a great benefit on horticulture generally, by seeking new combinations of characters, and seizing upon new and desirable variations when they occur, and propagating them. Practically all florists' varieties must be propagated vegetatively, for raised from seed they vary, sometimes only slightly from the original, but sufficiently to put them out of court as an example of the named variety, in other words, they are clonal varieties, and must be treated as such. The production of florists' flowers is definitely a specialized business, but is one which is conducted in Bermuda and in the writer's view could be increased.

Unfortunately, there is a tendency these days to turn to the use of artificial flowers, as I pointed out in an article in the May Bulletin Vol. XXXI, No. 5, entitled "Artificial Flowers". In some places this is having a detrimental effect on the production of the real article, and is, therefore, a challenge to the flower growers to meet these changing conditions, and to find methods to compete with the artificial product. The old and honourable art of flower growing must never be lost, especially in Bermuda.

The encouragement of the production of florists' flowers in Bermuda has, therefore, received the blessing of the Board of Agriculture. Earlier this year, a new act was passed by the Legislature, namely "The Importation of Fruits, Vegetables and Flowers Act, 1961", which enables the Board of Agriculture

to prohibit the importation of any particular kind of flower at times when the Board believes sufficient of this flower is being grown in Bermuda to supply the local demand. This is definitely of great advantage to the flower growers, and provides excellent protection. The Board, therefore, hopes that growers will take advantage of the situation and to produce the varieties which the retail florists require.

It is most important that the growers become fully conversant with the flower trade. To produce these varieties which the trade accepts as standard varieties, and most certainly to produce high quality flowers. The importers of flowers in Bermuda have established good businesses, and naturally to satisfy their clientele they endeavour to deal with high class produce. Bermuda, being so close to America, where it is a simple matter to obtain high quality produce, Bermudians have learnt to be very conscious of quality, both in food products and flowers. With this fact in mind, the Board in getting protection for the flower growers naturally do not wish to lower the standard of florists' flowers, but to at least maintain the present standards.

The main object of this article is to bring these facts to the attention of the flower growers in the hope that it will act as an encouragement to produce more flowers suitable for the cut flower trade. In 1959, the importation of cut flowers from all sources, amounted to nearly £6,000. The figure for 1960 may well show an increase, but unfortunately it is not available at the time of writing.

The production of flowers locally is regarded as important for several reasons. Firstly, anything which can be grown here is an asset in that it keeps money in Bermuda. Secondly, it provides a healthy and pleasing livelihood and, thirdly, the greater the production of cut flowers and ornamental plants the more attractive Bermuda becomes. This last factor in itself, is most important.

This highly specialised business of flower production is one which should be expanded in Bermuda, and the growers are advised to give very careful thought to expanding their present production. Any new grower who contemplates growing flowers for the cut flower trade is advised to seek the advice of the retailers, to make certain that the varieties are suitable, with long stems, and the general quality of the flowers is up to required standards.

Flowers which are in great demand by the retail florists are: roses, carnations, gladioli, chrysanthemums, iris (Spanish type), gerbera, arthuriums, orchids, freesia, mimosa, narcissi (including daffodils), Easter lilies, sweet peas, calla lilies and tuberose. There is a more limited demand for stocks, antirrhinums, gypsophila, calendula, larkspur and other annuals.

G. R. G.

THE FATE OF THE BERMUDA EASTER LILY

Ever since the first Easter lily bulbs were brought to Bermuda in 1853 by a traveller from Japan, this lovely flower has been prominent in the horticultural history of the Colony. The moderate temperatures and rich soils of our Islands favoured the growth of the newly introduced bulbs so that by 1870 the Easter lily was common in many gardens throughout Bermuda.

The early Bermuda lily was given the commercial name **Lilium Harrisii** after W. K. Harris, a Philadelphia nurseryman who marketed a few of the bulbs in the United States in the 1870's.

The first commercial shipment of lily bulbs was made from Bermuda in 1883; this was the start of an important industry in Bermuda involving the export of many millions of lily bulbs during the period from 1890 - 1903. This industry declined slowly in the subsequent years as a result of virus disease problems in local fields. Nevertheless, a considerable acreage of Easter lilies was planted in Bermuda during the 1920's and 1930's. The development of an early flowering strain of the Easter lily by Mr. Howard Smith of St. David's in 1921 gave the sagging industry a boost. The **Howardii**, lily as it was called, was much in demand by foreign buyers both for greenhouse and cut-stem trade.

The coming of the Second World War removed Japan from her dominant position as a producer of lily bulbs and in so doing encouraged a resurgence of lily growing in Bermuda. In 1945 there were some 50 acres of lilies planted locally and almost 4,000 cases of bulbs were exported to U.S. and British markets.

The end of the war saw a rapid decline in Bermuda lily industry. Japanese bulbs once again were available to American buyers. Growers of lilies in the southern and far-western States of the United States of America found it both possible and profitable to produce lily bulbs and flowers for the American market. As a result of these pressures the lily bulb industry in Bermuda rapidly dwindled to its present position of virtually no economic significance.

What lies ahead for the lily industry? There is little hope of ever regaining a market for our Easter lily bulbs. The few growers who are currently planting stocks of lilies accept this. However, there has been, and continues to be, a small, but vigorous trade in Easter lily flowers, particularly the cut-stems. Part of this trade is local but most of the flowers cut are shipped to the United States in fulfilment of orders which in most instances are placed year after year by persons who have come to appreciate the beauty of the Bermuda Easter lily.

The Annual Report by the Director of Agriculture for the year 1960 reveals that only 12 acres of lilies were planted in the 59-60 season. This was approximately 1 acre less than the area planted during the previous season. Despite this the value of lily flowers exported was up, indicating that more cut stems, rather than buds, were exported in 1960.

During the Easter season of this year growers seemed to be well satisfied with the foreign orders for lilies and in fact most growers could have sold many more stems had they been available.

The growing of lilies is an exacting job and one which necessitates a great deal of hand labour. Nevertheless, it appears that a small acreage of lilies properly managed can be profitable to the grower. For this reason it is unlikely that the lily industry will vanish from our Colony in the near future.

The Department of Agriculture hopes soon to be in a position to aid those interested in continuing, or starting for the first time, in the growing of lilies.

In 1957 small stocks of both early and late flowering strains of the Easter lily were purchased from several growers. Since that time these stocks have been increased to the point where the Department now has slightly over one acre of lilies relatively free from the two most troublesome virus diseases. At the end of the 1961-62 season the Department hopes to sell some of this stock of bulbs to interested growers. A continuance of this programme will give added insurance that Easter lilies will always be grown in our Islands.

I. W. HUGHES,

Assistant Director of Agriculture.

POISONOUS PLANTS

It is surprising how many of the plants commonly found around our homes are poisonous if eaten. True enough, most of the poisonous plants have such an unpleasant taste or consistency that there is little likelihood of any adult eating them. However, some of the plants which contain dangerous toxins do not taste bad; furthermore, children will often thoughtlessly chew and swallow plant parts even though they are unpalatable. It might be useful, then, that the most dangerous of the poisonous plants likely to be found in Bermuda be listed for reference sake. From time to time one or more poisonous plants will be discussed in this bulletin.

Oleander - Nerium oleander L. This plant, so common in Bermuda, contains dangerous glucosides, which can be fatal if consumed in sufficient quantity. All parts of the plant are poisonous if eaten. One leaf is reported sufficient to kill an adult human. Dry leaves are said to be almost as toxic as the green ones. A number of persons have suffered serious poisoning as a result of eating frankfurters or other foods grilled on an open fire on the end of an oleander stick. The inhalation of smoke of oleander can also cause symptoms of poisoning. Some individuals suffer skin rashes following the handling of oleander plants.

The properties of the poisonous constituents in oleander plants are similar to those of digitalis. Symptoms include nausea, vomiting, colic, dizziness, drowsiness, decreased pulse rate and respiratory paralysis. The bitter taste of oleander makes the plant very unpalatable but children should be cautioned as to the danger of this plant.

Cattle and goats will not normally eat oleander but if eaten accidentally by these animals death can result. Branches trimmed from oleander plants should never be left in reach of cattle or goats since such animals will often eat hedge and plant trimmings left on the ground.

Lucky Nut or **Spanish Oleander - Thevetia nereifolia.** This plant is fairly common in hedges and ornamental plantings throughout the Colony. Lucky Nut belongs to the same family as the oleander (Apocynaceae) and the toxicity and symptoms are similar to those described above for oleander. All parts of the plant are poisonous if eaten.

(Information based largely on "Poisonous Plants Around the Home" by Erdman West, Univ. Fla. Ag. Exp. Station.)

I. W. HUGHES,

Assistant Director of Agriculture.

PLANTSMAN'S CHOICE

SALVIA FARINACEA

"The Mealycup Salvia"

Visitors to the Botanical Gardens during the past year have no doubt noticed the very beautiful cloudy blue effect we have obtained in our beds, particularly in the Formal Gardens.

The culprit is our "Plantsman 'sChoice" for this month, namely Salvia Farinacea, "The Mealycup Salvia".

Many readers are acquainted with the red bedding salvias grown in Bermuda, on an even larger scale in the U.S.A., and in particular in Europe. Visitors to the Royal Parks of London, have possibly been "hit in the eye" by the vivid, but rather stiff and formal appearance of massed beds of this plant, which are always to be seen in the summer months.

Our choice is, however, less harsh to the eye, more quietening to the mind, and less formal in appearance than its cousin and is obviously therefore more Bermudianised. What is even more important, it is very easy to propagate and cultivate.

Salvia farinacea is one of a very huge family of mostly sub-shrubs and herbs. The distribution of the family is wide, and three are actually naturalised in Bermuda. The common culinary sage, is a Salvia, namely Salvia officinalis.

Our choice is a native of Texas, so there are **BIG** possibilities.

It is easily raised from seed, which is obtainable from most seedsmen, and can be sown with success at any time of the year. The colour may best be described as violet blue. The flower spikes are long and very erect and numerous. It will attain a height of two and a half to three and a half feet, dependent upon conditions.

A completely white form will appear occasionally, and this is actually listed as variety, Alba. However, the writer has frequently and carefully collected seed from this form, but the greater percentage of resulting seedlings have invariably been blue.

Plants may be had in flower three-four months from sowing. They will continue in full flower for some six to eight months, before requiring a resting period.

The only serious pest attacking this plant appears to be Spider-Mite. Spraying with malathion affords some control. However, this pest only takes on damaging effect with the approach of warmer weather. It does not seem to bother younger plants, but only older plants, which are approaching the completion of their flowering cycle.

For finest results, the seedlings should be transplanted to a nursery bed whilst young, and allowed to "clump-up" before final planting. They may be moved in full flower at any time of the year. Copious water supply after moving will ensure no flagging or wilting of the flowers.

Older plants may be removed from the beds, divided and rested in the nursery plots for a short period. They will then give a good account of themselves all over again.

This highly desirable plant may be used in floral displays, herbaceous and shrub borders, in the rock garden, and for cut flower purposes, with equal success.

It is indeed very much a domiciled onion.

DONALD J. MOORE,
Superintendent,
Bermuda Botanical Gardens.

ON THE FARMS

The summer months are always a little slow on the farms, at least on those farms where vegetable growing is the main source of income. High temperatures and lack of water both serve to limit the type of crop which can be grown successfully. It has often been said that lack of moisture is the chief limiting factor in crop production in Bermuda. There is little doubt that most of the common vegetable crops could be grown in the summer months if irrigation of fields could in some way be achieved. However, the short supply of fresh water in Bermuda virtually rules out the possibility of irrigating farm lands, which means that the farmer has no choice but to continue to grow crops which will fit in with the natural supply of rainwater.

There have been lots of tomatoes on the market and the large numbers of rapidly maturing, non-bearing plants to be seen throughout the Colony indicates that local tomatoes should continue to be plentiful for at least another four weeks.

A few pumpkins have been harvested and this vegetable should be abundant in a few weeks now. Cantaloups were hit hard by the wet weather in June and the resulting outbreaks of powdery mildew. The mildew disease quickly destroys the vine leaving the fruit with no means of support. There is no alternative other than to harvest the ripe fruit and discard those fruit which are not mature.

There should be a few local watermelons on the market by the end of this month, or at least by the first week of August.

String beans have been bringing a good price this year. A good deal of trouble has been experienced with both bacterial blight and rust. As a result crops have been small. There is no adequate control for the bacterial blight disease of beans. Crop rotation and the purchase of clean seed (the disease is seed born) are the best preventative steps. Rust can be checked with sulphur dust in most instances. However, the fungicide Maneb is a better material. The Department of Agriculture has this material and will spray beans for farmers on request.

The corn season is over. As is usually the case the early corn was fairly worm-free but much of the late corn was badly infested by corn ear-worm. There is only one way of stopping this pest and that is through regular and

frequent applications of insecticides. Regular and frequent in this instance means every three to four days. DDT 10% dust or a spray, containing 1.5 lbs. of actual DDT per 100 gallons should be used.

The new insecticide Sevin will probably be recommended for earworm control next season. Farmers will have to realize that control of this pest will never be achieved by just one or two treatments per season.

Some time ago the Department of Agriculture acquired a small amount of Pangola grass runners from the West Indies in order to try the grass under Bermuda conditions. A plot was planted at Government House and has done very well there for the past two years. The grass grows very rank if left ungrazed but probably will have its greatest value as a pasture grass. During June a field of approximately one-half acre at Spittal Pond was set out in Pangola grass. Runners were obtained from the Government House plot and planted in much the same way that Bermuda grass is planted. It is intended to let this field grow for several months and then permit cows to graze the grass. Farmers are invited to visit the field (see Mr. Jerry Moniz for the location of the field) and follow the progress of this grass.

I. W. HUGHES,

Assistant Director of Agriculture.

MONTPELIER ARBORETUM

The 22-acre triangular tract of land between Middle Road and Montpelier Road in Devonshire, has reached its final stage of selective clearing and is now planted out with a wide range of ornamental and economic trees and shrubs. This long term project is one of a number of projects of the Department of Agriculture aimed at the conservation of open spaces. Its development must be cautiously carried out with strict rules for the preservation of natural beauty. Enthusiasm for development must be delicately balanced with rules of conservation and extreme care must be taken so that the desired effect will be achieved.

Montpelier Arboretum is one of the integral parts of this Department and is unofficially open to the public during the hours from sunrise to sunset every day of the year. In time, when trees and shrubs now planted reach maturity, Montpelier Arboretum will be a place of beauty to local residents and visitors alike. Its importance will be increased with every new tree or shrub planted, and it is hoped when the Arboretum is officially opened the number of visitors will gradually increase.

The development of Montpelier Arboretum should be considered a rather different type of development compared with some of the other areas now being developed by the Department of Agriculture; such as the bird sanctuary and natural reserve at Spittal Pond, Tulo Valley Nursery, and the tourist attraction at Fort Scaur. In a strict sense it is not a park, although many people will obviously regard it as one, but rather a collection of growing trees and woody shrubs, maintained for the purpose of study, investigation and education.

The public are invited to visit the Arboretum during the hours of daylight and may enter via two gates on the Middle Road and via one entrance on Montpelier Road.

J. H. J.

CONIFERS

Trees of the Conifer family have always been a great favourite in Bermuda because of their evergreen characteristics. By far the best known being **Juniperus bermudiana,** the "Bermuda Cedar".

During the last decade, due to the loss of the Bermuda Cedar through a scale infestation, Casuarina equisetifolia, (not a conifer, but resembling one) has been planted extensively throughout the Colony to provide wind breaks and a quick coverage. The Casuarina is a very rapid grower and soon outgrows its allotted space; but without doubt it has served a most useful purpose. However, the writer now believes that a halt or partial halt should be called to the planting of the Casuarina, and other trees should be considered.

The title of these notes covers a wide range of evergreen trees, many of which grow well in Bermuda. During recent years, within the properties controlled by the Department of Agriculture, several coniferous trees have been tried, all of which have made excellent growth in a variety of situations.

The most outstanding of the trees under trial are:— Juniperus silicicola; J. japonica sylvestris, J. virginiana; and J. Chinesis, pfitzeriana; Cupressus macrocarpa; C. lusitanica; C. sempervirens and C. arzonica; Callistris verrucosa and Araucaria excelsa. Admittedly, the Araucaria excelsa has been in Bermuda a long time, but never planted extensively.

Although the Department is not yet in a position to commence distributing these plants in quantity, the propagation of these trees is being increased as rapidly as possible. Mention is made of them now, because it is thought that the private nurseries may wish to stock these plants and use them in various landscape gardening schemes. It must be pointed out, however, that the growth of the species mentioned here is slow, compared with the Casuarina, but they make more stately trees and they will add a great deal to the general appearance of Bermuda.

Future notes in this bulletin will include other trees and palms which also deserve more popularity.

G. R. G.

WEATHER RECORDING STATION AT BOTANICAL GARDENS

Summary of Climatological data obtained at the Botanical Gardens during June, 1961

Mean maximum temperature 79.0
Mean minimum temperature 70.6
Mean monthly temperature 74.8
Absolute maximum 81.9 on June 29
Absolute minimum 64.3 on June 1
Rainfall 5.25 inches
No. of rain days 11